

WHAT IS CLAIMED IS:

1. An erasable ink composition comprising:
a solvent system including:
a component selected from the group consisting of an optionally
5 substituted cycloalkane, an optionally substituted cycloalkene, an optionally
substituted cycloalkanone, and mixtures thereof; and
an organic ester;
a rubber; and
a pigment;
10 the solvent system present in a sufficient amount that the erasable ink composition
will flow in a writing implement.
2. The erasable ink composition of claim 1 wherein the pigment
is graphite powder, carbon black powder, or mixture thereof.
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3. The erasable ink composition of claim 1 wherein the pigment
is present in an amount of 2% to 25% of the total weight of the erasable ink
composition.
4. The erasable ink composition of claim 1 wherein a sufficient
20 amount of the solvent system is present so that the erasable ink composition has a
viscosity from 20,000 cP to 60,000 cP at 25 °C.
5. The erasable ink composition of claim 1 wherein the solvent
system comprises a component selected from the group consisting of an optionally
substituted cycloalkane having a 4 to 7 member ring, an optionally substituted
25 cycloalkanone having a 4 to 7 member ring, an optionally substituted cycloalkene
having a 4 to 7 member ring, and mixtures thereof; and an organic ester.

6. The erasable ink composition of claim 1 wherein the solvent system comprises:

a component selected from the group consisting of cyclohexane, cyclohexanone, and mixtures thereof; and

5 isobutyl butyrate.

7. The erasable ink composition of claim 1 wherein the solvent system is present in an amount of 25 % to 55 % of the total weight of the erasable ink composition.

8. The erasable ink composition of claim 7 wherein the solvent system includes:

cyclohexane present in an amount of 40% to 80% of the total weight of the solvent system; and

isobutyl butyrate present in an amount of 20 % to 60 % of the total weight of the solvent system.

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9. The erasable ink composition of claim 1 wherein the rubber is a natural or synthetic rubber.

10. The erasable ink composition of claim 1 wherein the rubber is a synthetic rubber which is a copolymer of styrene and isoprene.

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11. The erasable ink composition of claim 1 wherein the natural or synthetic rubber is present in an amount of 10 % to 40 % of the total weight of the erasable ink composition.

12. The erasable ink composition of claim 1 further comprising a component selected from the group consisting of:

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a plasticizer;

an additive selected from the group consisting of a corrosion inhibitor, a flow enhancing compound, and mixtures thereof;

a liquid butene polymer; and

mixtures thereof.

13. The erasable ink composition of claim 12 wherein the additive comprise a corrosion inhibitor.

14. The erasable ink composition of claim 13 wherein the corrosion inhibitor comprises a phosphate ester present in an amount of 0.5% to 6% of the total weight of the erasable ink composition.

15. The erasable ink composition of claim 12 wherein the additive comprises a flow enhancing material.

16. The erasable ink composition of claim 15 wherein the flow enhancing material is a mineral oil present in an amount of 0.5% to 12% of the total weight of the erasable ink composition.

17. The erasable ink composition of claim 12 wherein the liquid butene polymer comprises a component selected from the group consisting of polybutene, a copolymer of butene and isobutene, and mixtures thereof.

18. The erasable ink composition of claim 12 wherein the plasticizer is at least one phthalic ester selected from the group consisting a dibutyl phthalate, dioctyl phthalate, and mixtures thereof.

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19. The erasable ink composition of claim 18 wherein the at least one phthalic ester is present in an amount of 3% to 25% of the total weight of the erasable ink composition.

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20. The erasable ink composition of claim 18 wherein the at least one phthalic ester is a phthalic ester mixture comprising:

dibutyl phthalate in an amount of 10% to 40% of the total weight of the phthalic ester mixture; and

dioctyl phthalate in an amount of 60% to 90% of the total weight of the phthalic ester mixture.

21. An erasable ink composition comprising:
a solvent system including:
5 a component selected from the group consisting of an optionally substituted cycloalkane, an optionally substituted cycloalkene, an optionally substituted cycloalkanone, and mixtures thereof; and
an organic ester;
at least one phthalic ester selected from the group consisting a dibutyl
10 phthalate, dioctyl phthalate, and mixtures thereof.;
a rubber;
an additive selected from the group consisting of a corrosion inhibitor, a flow enhancing compound, and mixtures thereof;
a liquid butene polymer; and
15 a pigment comprising graphite and carbon black.

22. The erasable ink composition of claim 21 wherein the solvent system present in a sufficient amount that the erasable ink composition will flow in a writing implement and the erasable ink composition has a viscosity from 20,000 cP to 60,000 cP at 25 °C.

- 20 23. The erasable ink composition of claim 21 wherein the solvent system comprises a component selected from the group consisting of an optionally substituted cycloalkane having a 4 to 7 member ring, an optionally substituted cycloalkanone having a 4 to 7 member ring, an optionally substituted cycloalkene having a 4 to 7 member ring, and mixtures thereof; and an organic ester.

- 25 24. The erasable ink composition of claim 21 wherein the solvent system comprises:
a component selected from the group consisting of cyclohexane, cyclohexanone, and mixtures thereof; and
isobutyl butyrate.

25. The erasable ink composition of claim 21 wherein the solvent system is present in an amount of 25 % to 55 % of the total weight of the erasable ink composition.

5 26. The erasable ink composition of claim 21 wherein the graphite is present in an amount of about 2 % to about 20 % of the total weight of the erasable ink composition and the carbon black is present in an amount of about 2 % to about 20 % of the total weight of the erasable ink composition.

27. An erasable ink composition comprising:
a solvent system including:
10 cyclohexane present in an amount from about 40 % to about 80 % of the total weight of the solvent system; and
isobutyl butyrate present in an amount from about 20 % to about 60 % of the total weight of the solvent system;
at least one phthalic ester selected from the group consisting a dibutyl
15 phthalate, dioctyl phthalate, and mixtures thereof;
a rubber;
an additive selected from the group consisting of a corrosion inhibitor, a flow enhancing compound, and mixtures thereof;
a liquid butene polymer; and
20 a pigment comprising graphite and carbon black;
the solvent system present in a sufficient amount that the erasable ink composition will flow in a writing implement and the erasable ink composition has a viscosity from 20,000 cP to 60,000 cP at 25 °C.

28. The erasable ink composition of claim 27 wherein the solvent
25 system comprises a component selected from the group consisting of an optionally substituted cycloalkane having a 4 to 7 member ring, an optionally substituted cycloalkanone having a 4 to 7 member ring, an optionally substituted cycloalkene having a 4 to 7 member ring, and mixtures thereof; and an organic ester.

29. The erasable ink composition of claim 27 wherein the solvent system comprises:

a component selected from the group consisting of cyclohexane, cyclohexanone, and mixtures thereof; and

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isobutyl butyrate.

30. The erasable ink composition of claim 27 wherein the solvent system is present in an amount of 25% to 55% of the total weight of the erasable ink composition.